



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/552,453

10/07/2005

Kazumi Nagasawa

Q90153

2372

65565

7590

07/02/2010

SUGHRUE-265550

2100 PENNSYLVANIA AVE. NW

WASHINGTON, DC 20037-3213

EXAMINER

DAGER, JONATHAN M

ART UNIT

PAPER NUMBER

3663

NOTIFICATION DATE

DELIVERY MODE

07/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

SUGHRUE265550@SUGHRUE.COM

USPTO@SUGHRUE.COM

PPROCESSING@SUGHRUE.COM

Office Action Summary	Application No. 10/552,453	Applicant(s) NAGASAWA ET AL.	
	Examiner JONATHAN M. DAGER	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3663

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 7-8 filed 14 April 2010, with respect to the rejection of claim 1 under 35 U.S.C. 103(a) have been fully considered and are persuasive due to amendments. Therefore, the rejection of claim 1 under 35 U.S.C. 103(a) has been withdrawn.

Subsequently, the prior art rejections of all claims dependent therefrom are withdrawn.

However, upon further consideration, new grounds of rejection are warranted (see below).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2a. Claims 1-3, 5, and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oniishi (US 5,859,845), and further in view of Kikkawa (US 2002/003781).

Regarding claim 1, 5, 7, and 11, Oniishi discloses a vehicle load control system suitable for use in controlling electric power fed to lamps and motors aboard a vehicle (column 1 lines 6-7).

The load control invention comprises a control section which has a plurality of control switches and generates a control signal corresponding to the actuation of each of the control

Art Unit: 3663

switches, a multiplex processing section which multiplexes the control signal received from the control section and sends the thus multiplexed control signal to a multiplex transmission line, and load control sections which receive the multiplexed control signal sent over the multiplex transmission line and control the electric power fed to a corresponding one of loads on the basis of the thus received control signal (column 2 lines 58-67, column 3 line 1).

Thus, Oniishi has disclosed an invention configured to control the load electrical parts in the front of the vehicle (lights, motors, etc.), a control unit receiving a control signal for controlling the drive of the load electrical part through a main bus line of the vehicle, as well as a drive control unit which is connected to the controller through another bus line, wherein the signal is converted into a drive signal for the load electrical part.

Oniishi also discloses that the mounting position for the invention for the front electrical control unit is mounted next to the driver's seat (column 9 lines 10-12). Thus, the invention is located in the front portion of the vehicle.

Oniishi also discloses that the multiplex communication system employs a centralized control communications protocol which uses the load drive unit A 20 as the master node. The structure of characters of the data comprises one start bit, eight data bits, one parity bit (even), and one stop bit, as shown in FIG. 26. In the drawing, T_c designates a character time. The frame of the data comprises a header, the data (eight bytes), and BCC (block check characters = a checksum), as shown in FIG. 32A. A predetermined interval period T_{ci} is ensured between the characters. In the header, a frame number is made up of B0-B3, as shown in FIG. 27B. A transmission unit ID code is made up of B4 and B5, as shown in FIG. 27C. A communication

Art Unit: 3663

mode ID code is made up of B6 and B7, as shown in FIG. 27D (column 15 lines 66-67, column 16 lines 1-12).

Fig. 1 details a basic block diagram of the load control system. The SW unit 10 is connected to a control section 11. The control section 11 comprises a plurality of switches 11.sub.1 -11.sub.n arranged in a control panel (not shown), and light sources 12 for illumination purposes which are incorporated in the respective control switches for illuminating the surface of the control switch, and a light source 12 for use with an indicator which indicates operating conditions. The control section 11 generates a control signal corresponding to the actuation of each control switch. The SW unit 10 comprises a control section 10b which receives the control signal from the control section 11, being made up of the control switches 11.sub.1 -11.sub.n and connected to the SW unit 10, through an input interface (I/F) 10a, and nonvolatile memory 10g which is connected to the control section 10b and is made up of E.sup.2 PROM holding various data as will be described later (column 7 lines 6-19)

The control section 10b converts the received control signal into control data and generates a transmission frame by collecting a plurality of thus converted control data items. The control section 10b sends the transmission frame to the load drive units A 20 and B 30 through the communication interface (I/F) 10c and the multiplex transmission line 40. Further, the control section 10b outputs a drive signal to a drive section 10e consisting of switching means (not shown) through an output interface (I/F) 10d. Upon receipt of the drive signal, the drive section 10e is activated so as to control the illumination of the light sources 12 respectively provided in the control switches by selectively feeding the light sources the electric power from a power supply 10f. The power supply 10f is supplied with the electric power fed from the battery

Art Unit: 3663

50 through the power line 60b. The power supply 10f also feeds operating power to the input I/F 10a, the control section 10b, and the output I/F 10d.

The load drive unit A 20 is connected to a first electrical equipment group mounted on the body of the motorbus, that is, loads 21.sub.1 -21.sub.n. Further, the load drive unit A 20 is provided with a control section 20b which is connected to the SW unit 10 via the multiplex transmission line 40. The control section 20b receives the control data from the SW unit 10 by way of a communications interface (I/F) 20a. The control section 20b sends a drive signal based on the received control data to a drive section 20d, consisting of unillustrated switching means, by way of an output interface (I/F) 20c. The drive section 20d is activated by the received drive signal so as to drive an associated load by selectively feeding the electric power received from a power supply 20e to the load. The power supply 20e is supplied with the electric power fed from the battery 50 through the power line 60a. The power line 60a led into the load drive unit A 20 is divided into power lines 60b and 60c. The load drive unit A 20 is provided with a fuse F and a fusible link FL which respectively connect the power line 60a with the power lines 60b and 60c (column 7 lines 21-56).

Thus, Oniishi discloses that the front electrical control unit converts the control communication signal of the main bus line into a usable signal of the sub-bus line, and transmits the control signal received through the main bus line to the drive control unit through the sub-bus line.

However, while Oniishi does disclose the same structure and elements as claim 1, Oniishi only discloses that the data is modified in the drive control unit, and does not explicitly disclose

Art Unit: 3663

that the protocol has been converted to a secondary protocol, the first and second protocols varying in communication speed.

Kikkawa teaches a multiplex vehicular communication invention (title), which contains a data relay unit which has a plurality of send/receive (SR) sections. Communication lines are connected to the respective SR sections, and nodes are connected to the communication lines. The data relay unit further includes a destination table and header tables. In the data relay unit, a data frame sent from a node is received by one of the SR sections, and the SR sections which ought to send the data frame are identified by referring to the destination table. A header according to the appropriate communication protocol is formed by referring to one of the header tables. Further the data frame including the formed header is formed and sent to the destination node by the identified SR sections. When nodes are added or eliminated, this system can be reconfigured only by modifying or replacing the destination table and the header tables (abstract).

Thus, it is taught a control unit configured to convert a communication protocol of a first bus to a communication protocol of a second bus when necessary.

Kikkawa teaches that in all the nodes in the multiplex communication system are appropriately divided into the networks according to the required communication speed and the amount of data to be sent. The communication protocol used in each network 11-14 is also determined according to the required communication speed and the amount of data to be sent (para 0027).

Art Unit: 3663

Thus, each sub-bus in the invention of Kikkawa is distinct from the other in the protocol used, the protocol (CAN, BEAN, IEBUS, ISO9141, see fig.1) being chosen with respect to communication speed.

Oniishi has disclosed a base invention which is capable of all functions of the claimed embodiments, including a vehicle infrastructure in which data is modified so that communication between vehicle components is enabled. Where Oniishi is deficient, with respect to claim 1 is that Oniishi does not explicitly disclose wherein the protocol is changed with respect to transmission speed. Kikkawa cures the deficiency.

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of a control unit configured for protocol conversion. Doing so would provide for communication between vehicle ECUs with respect to message priority and communication speed.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

Regarding claim 2, Fig. 3, clearly illustrates the drive control unit of Oniishi is located in an electronic connector.

Art Unit: 3663

Drawings and pictures can anticipate claims if they clearly show the structure which is claimed. See MPEP 2125.

Regarding claims 7 and 8, Oniishi discloses that the invention relates to a vehicle load control system suitable for use in controlling electric power fed to lamps and motors aboard a vehicle (column 1 lines 5-7). Further, Oniishi discloses that the load drive unit A 20 is also connected to a first group of detecting switches 22.sub.1 -22.sub.n and sensors 23.sub.1 - 23.sub.n mounted on the body of the motorbus. Signals output from these switches and sensors are input to the control section 20b by way of an input interface (I/F) 20f. Battery relays, lighting switches, and switches for detecting the operation of wipers, micro inversions, and the opening of a door can be mentioned as the detecting switches 22.sub.1 -22.sub.n. The control section 20b uses the previously described input signals when controlling the loads 21.sub.1 -21.sub.n. Further, the control section 20b converts the input signals into data and sends the thus converted data to the other units, i.e., the SW unit 10 and the load drive unit B 30, by way of the communications interface I/F 20a and the multiplex transmission line 40 (column 7 lines 38-57).

Thus, the invention of Oniishi is clearly capable of operating such load electrical parts as a clearance lamp and a cornering lamp, as well as providing a control signal to the windshield wiper motor.

Regarding claims 9 and 10, Oniishi, as cited above, is clearly drawn to windshield wiper operation, but does not explicitly state that there is a sensor mounted to monitor the washer fluid level. Kikkawa is also silent on this exact embodiment, although it is noted that Kikkawa adapts

Art Unit: 3663

the invention for communication among ECUs in a vehicle, the first network 11 includes a door ECU 311, a meter ECU 312, an air-conditioner ECU 313 and the like as nodes (0026).

Even though it is not explicitly taught or disclosed in either invention, it would be apparent to one of ordinary skill in the art at the time of the invention that the multiplexing systems of Oniishi and Kikkawa, alone or in combination, would clearly render this embodiment obvious since both inventions are drawn toward sensing multiple vehicle control parameters, both programmed or manually activated via switches, and controlling the load distributed to the load electrical parts in response.

Regarding claim 12, the combination teaches a CAN protocol for the priority, high speed protocol (see fig. 1, 12), and other subsequent protocols which are of lesser communication speed. The communication protocol employed by each network is not limited to BEAN or the like employed in the first embodiment. That is, each network may employ any communication protocol such as VAN or PALMNET as long as the communication protocol provides the structure of a data frame that includes a header so that the destination node of the frame can use the data body in the frame (see Kikkawa at para 0064).

Even though it is not explicitly taught or disclosed in either invention, it would be obvious to one of ordinary skill at the time of the invention the vehicle communication system of Kikkawa could be configured to support a vehicle bus protocol such as the Local Interconnect network given the above citations, malleability of the invention, and the LIN is based on the ISO 9141 standard, as taught by Kikkawa.

Art Unit: 3663

2b. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oniishi and Kikkawa, as applied to claims 1 and 2 above, and further in view of Lesesky (US 2002/0060625).

Regarding claims 4 and 6, Oniishi does not explicitly detail secondary auxiliary control modules, as claimed.

Lesesky teaches that the data communications apparatus 30 preferably includes at least one electronic subsystem 40 associated with the heavy duty vehicle 20. The at least one electronic subsystem 40, for example, can include an anti-locking brake system ("ABS") 41 connected to the heavy duty vehicle 20. The tractor/trailer combination, however, preferably includes a plurality of electronic subsystems associated with tractor 21 and/or trailer 25. The electronic subsystems 40 preferably produce data or includes some type of signal generating means, e.g., preferably provided by a signal generator 42. Some examples of these electronic subsystems 40 and features which may be controlled and/or monitored by the apparatus of the present invention are illustrated for a tractor/trailer combination in Table I and for an agricultural tractor in Table II below:

Art Unit: 3663

TABLE I

TRACTOR	TRAILER
Mirror Tracking	Reefer Temperatures
Mirror with Trailer Display	Reefer Pressures
Controls for Reefer (Engine)	Trailer Identification
Controls for Trailer Slide	Blind Spot Warning
Axle	Cargo Information
Controls for Landing Gear	Smoke/Fire Detection
Active Fueling	Overall (Trucker)

TABLE I-continued

TRACTOR	TRAILER
Recorder for Trailer Functions	Cargo Shift
Satellite for Trailer Functions	Weight Detection
Brake System Information	Anti Lock Failure
Brake By Wire	Brake By Wire
Climate Controls for Reefer	Backup Lamps
	Suspension Control
	Sliding Axle Control
	Liftable Tailgate
	Tire Pressure Monitor
	Lamp Outage Monitor
	Stop Lamp Saver (with doubles and triples)
	Water in Air Reservoir
	Liftable Landing Gear
	Brake Temperature
Mirror with Trailer Display	Emergency Line Pressure Detection
Trailer Identification	
Trailer Brake Temperature	Blind Spot Warning
Trailer Axle Temperatures	Cargo Information
Trailer Security	Tire Pressure Warning
Weight Broadcast	Smoke Detector
Trailer Voltage Status	Roll Over Protection
	Active Contingency (Lighting)
	Active Tire Pressure
	Backup Alarm
	Inventory Data Collection
	Security Warning
	Trailer Engine Start
	Trailer Engine Monitor
	Tractor/Changing from Reefer
	Trailer Dome Lamps
	Rear Door Lift (Motorized)

[0030]

TABLE II

TRACTOR	IMPLEMENT
Vehicle Speed Optimization	Sprayer Pressure
Engine Speed Optimization	Speed Planning Rates
Implement Display	Depth Position
GPS (Satellite Control to Implement)	Hydraulic Controls
	Speed Counting
	Moisture Sensing

(para 0029-0030).

Art Unit: 3663

Thus, it is disclosed secondary modules for driving secondary load electrical parts being responsive to sensed signals (e.g. tire pressure monitor), the sensed signal being converted into a control signal to alter the performance of the vehicle.

All of the components and methods are known in the above prior art. The only difference is a combination of these elements into a single device.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the second auxiliary modules of Lesesky onto the combination of Oniishi and Kikkawa, since all invention can be combined produce the predictable results of a vehicle communication architecture wherein a vehicle parameter is sensed, and a resulting command signal is transferred to the corresponding control modules. Doing so would enhance the capability to monitor and communicate with the various electronic subsystems in a vehicle.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 3663

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/552,453

Page 14

Art Unit: 3663

/JACK KEITH/

Supervisory Patent Examiner, Art Unit 3663